

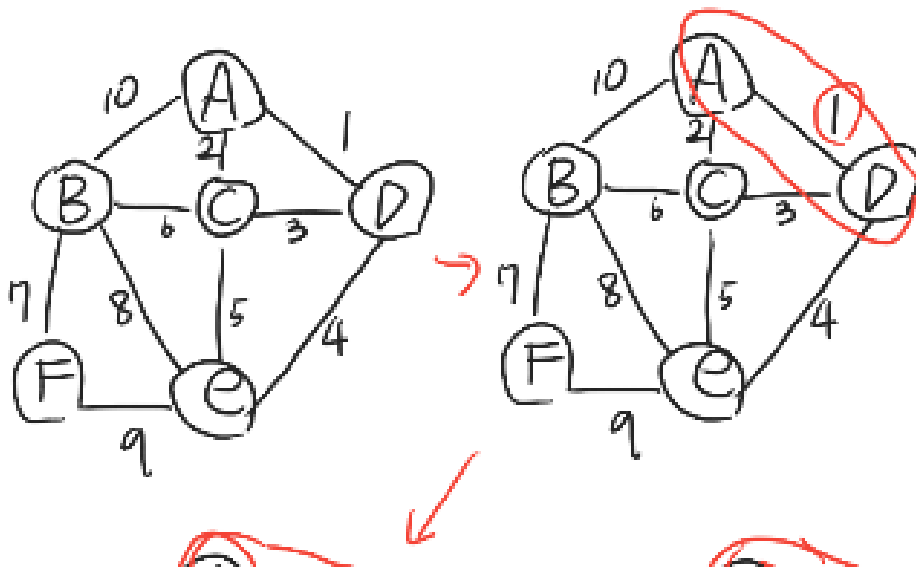
2.

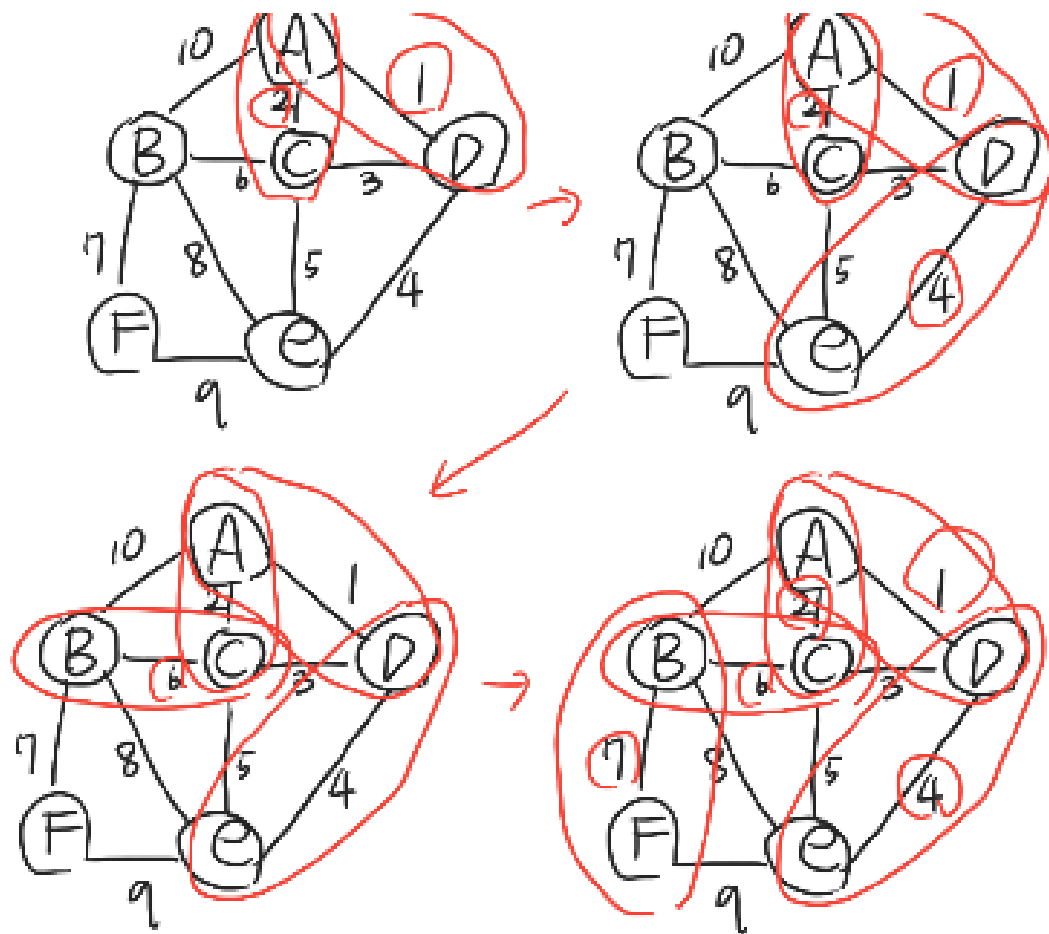
첫번째 for문 n 번

두번째 for문 $n \quad n/2 \quad \dots$
 $\underbrace{\hspace{10em}}_{\log_2 n}$

$$n \times \log_2 n = O(n \log n)$$

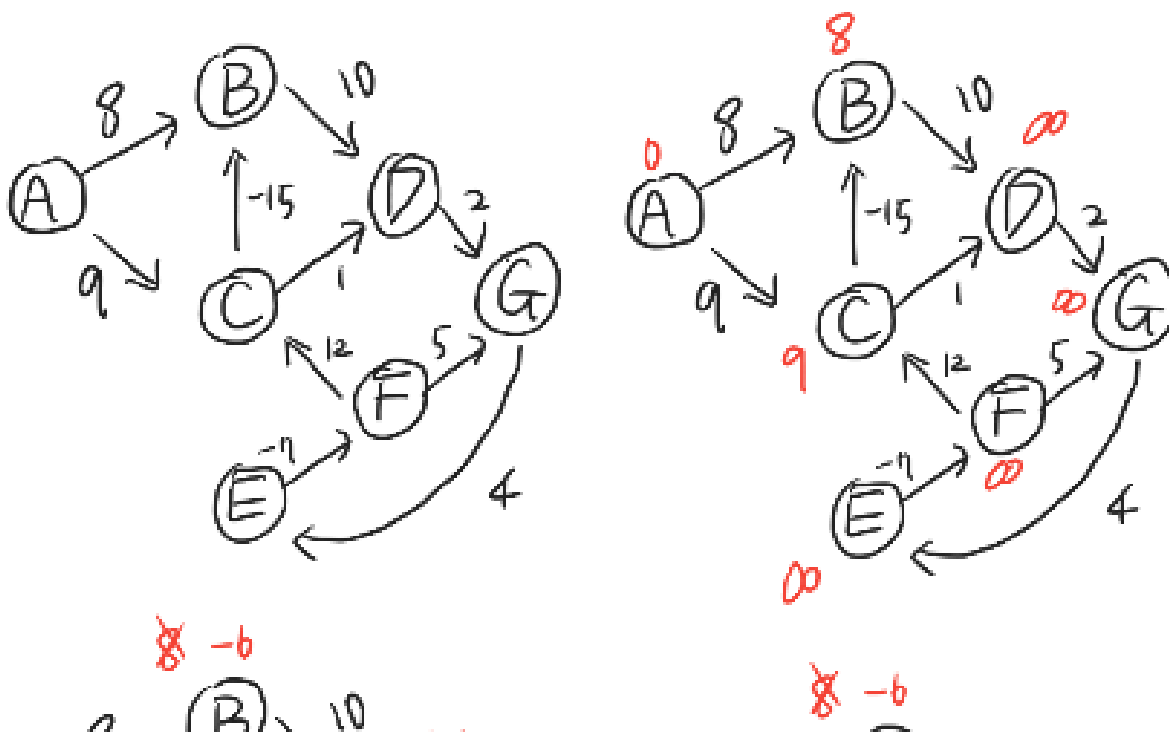
3 크루스칼 개선

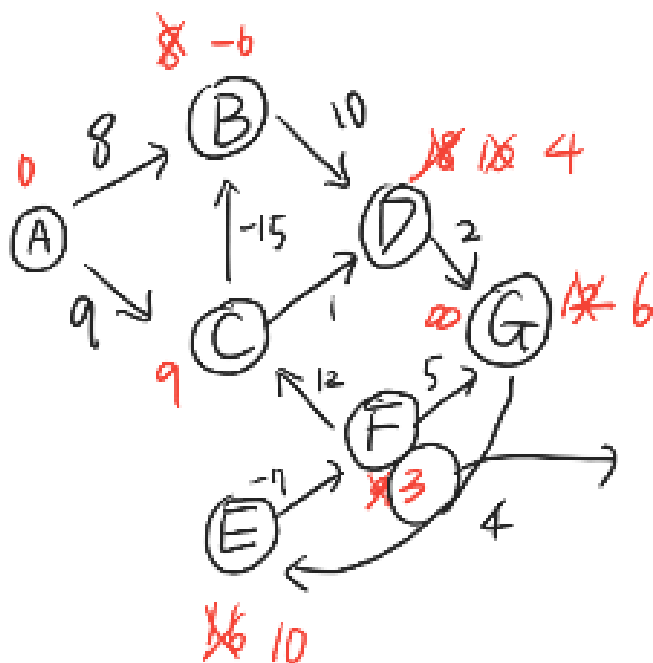
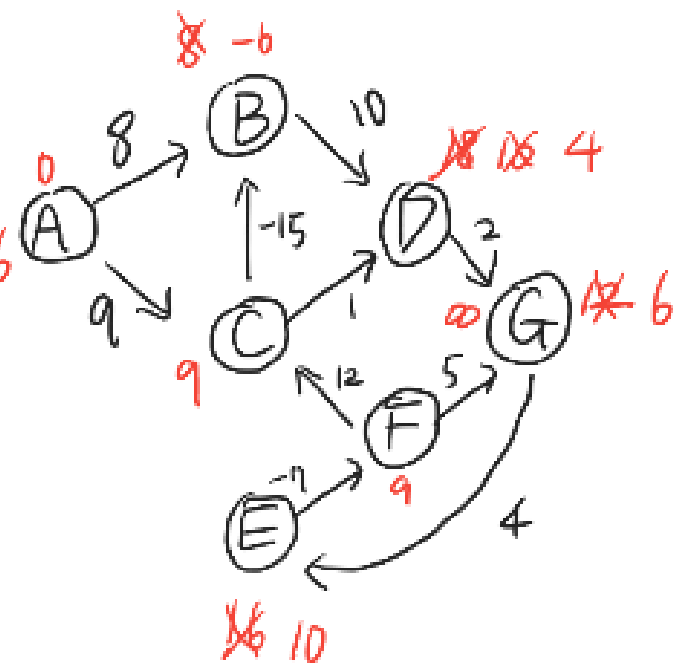
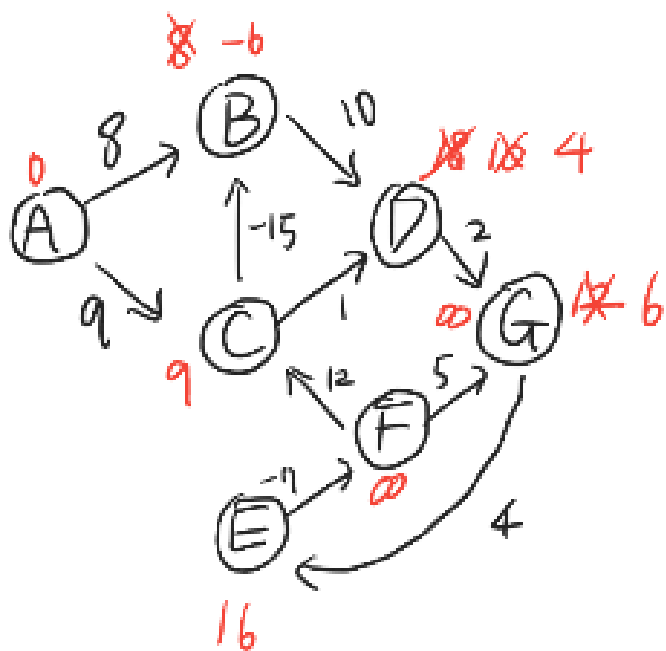
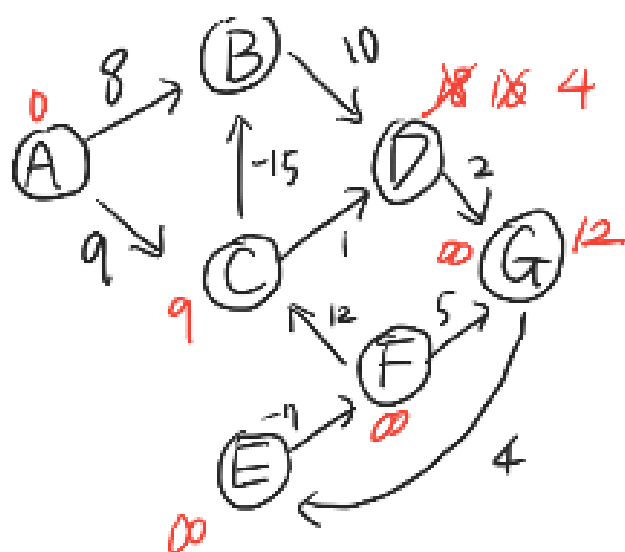
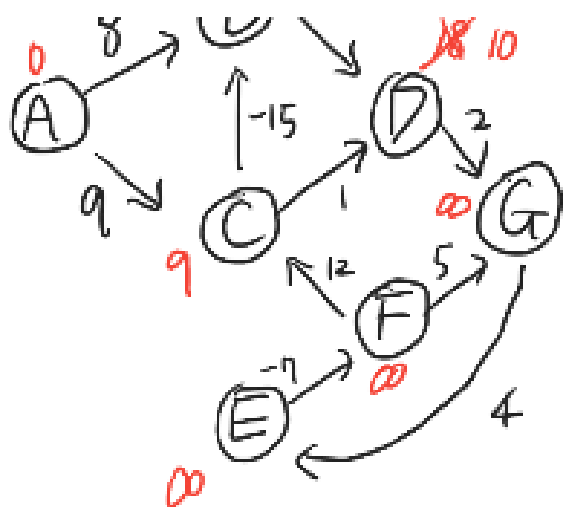




선택되지 않는 간선 3 5 8 9/10
 (C,D)(C,E)(B,E), (E,F)
 (A,B)

4. 벨만포드





2에서 f로 가는 최소비용 3

5. D^{-1}

	0	1	2
--	---	---	---

	D^0
	0 1 2

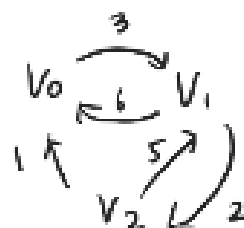
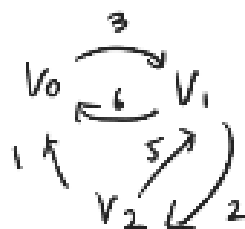
	D^1
	0 1 2

$$\begin{array}{c|ccc} 0 & 0 & 3 & \infty \\ 1 & 6 & 0 & 2 \\ 2 & 1 & 5 & 0 \end{array}$$

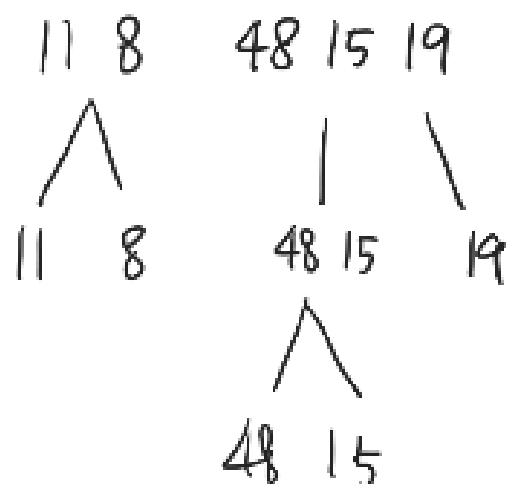
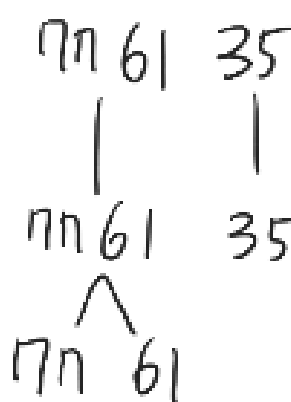
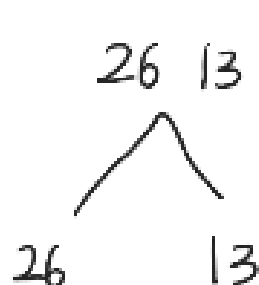
$$\begin{array}{c|ccc} 0 & 0 & 3 & \infty \\ 1 & 6 & 0 & 2 \\ 2 & 1 & 4 & 0 \end{array}$$

$$\left(\begin{array}{c|ccc} 0 & 0 & 3 & 5 \\ 1 & 6 & 0 & 2 \\ 2 & 1 & 4 & 0 \end{array} \right)$$

V_0, V_1 지나는 것 허용



$$6. \quad 26 \ 13 \quad \eta\eta \quad 61 \ 35 \mid 11 \ 8 \ 48 \ 15 \ 19$$



변환부분

$$1. \quad 13 \ 26$$

$$2. \quad 61 \ \eta\eta$$

$$3. \quad 35 \ 61 \ \eta\eta$$

$$4. \quad 13 \ 26 \ 35 \ 61 \ \eta\eta$$

$$5. \quad 8 \ 11$$

$$6. \quad 15 \ 48$$

$$7. \quad 15 \ 19 \ 48$$

$$8. \quad 8 \ 11 \ 15 \ 19 \ 48$$

$$9. \quad 8 \ 11 \ 13 \ 15 \ 19 \ 26 \ 35 \ 48 \ 61 \ \eta\eta$$

7.

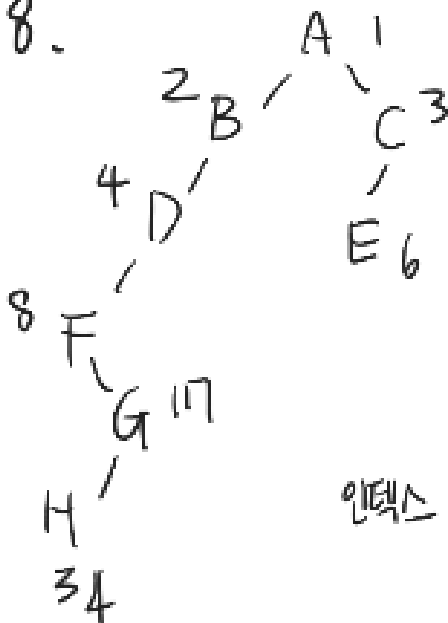
1. 정렬

$$2. \frac{(m^h - 1) / (m - 1) \times (m - 1)}{\text{높이 } h \text{ 인 경우 } \quad \text{최대 키 값}} \\ \text{노드의 최대 개수}$$

3. X 최대 m원이지만 항상 m원 탐색트리는 아니다.

4. 최대 m개 가능 O

8.



인덱스 최소 0 ~ 34 = 35개

9. 기수정렬

k 정렬

84 | 92 3 33 506 308 | 29

k^2 정렬

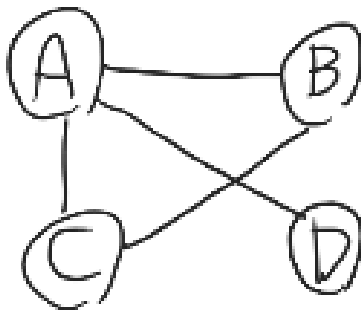
3 506 308 129 33 84 | 92

k^3 정렬

3 33 92 129 308 506 84 |

10

A	B	C	D
0	1	2	3



간선 1개인 경우 : 4

간선 2개인 경우 : $\frac{4 \times 3}{2 \times 1} \textcircled{6}$
 $-1 = 5$

((A,D)와 (C,B)인 경우 제외)

간선 3개인 경우 : $\frac{4 \times 3 \times 2}{3 \times 2 \times 1} = 4$

간선 4개인 경우 : 1

$$4 + 5 + 4 + 1 = 14$$

11.

⑦ 함수 중 증가량이 더 큰 쪽 $O(n^{2^n})$ 0

X. $O(n^2)$ 이 맞습니다.

X. $n^3 2^n$ $n^2 3^n$ $O(n^2 3^n)$

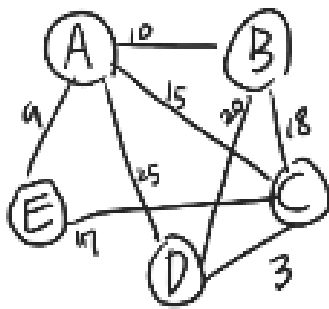
$$\lim_{n \rightarrow \infty} \frac{n^3 2^n}{n^2 3^n} = \lim_{n \rightarrow \infty} n \left(\frac{2}{3}\right)^n \quad \therefore n^2 3^n > n^3 2^n \quad n \rightarrow \infty \text{ 일 때}$$

(↑ .n

$$\left(\frac{2}{3} \right)^n$$

(2) 더 큰 n^3 $O(n^3)$

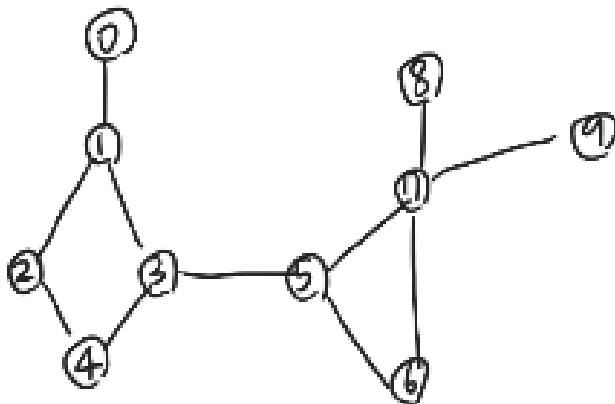
12. A에서 B까지 C를 D인간 E까지



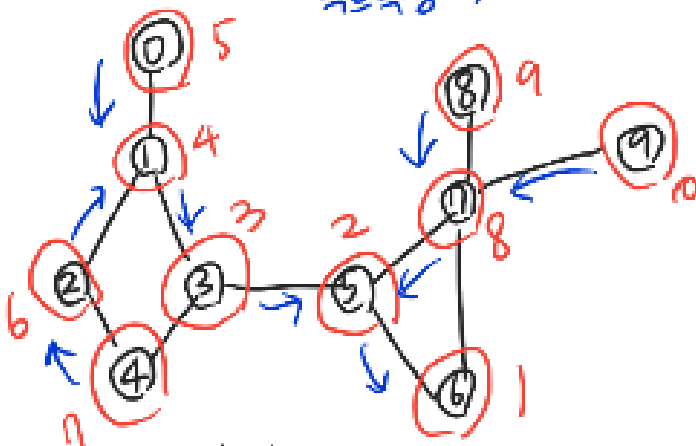
(D-C-E)
D ~ E (20)
B ~ E (19)
(B-A-E)

$$\text{차이는 } 19 - 18 = 1$$

13



백트래킹 →

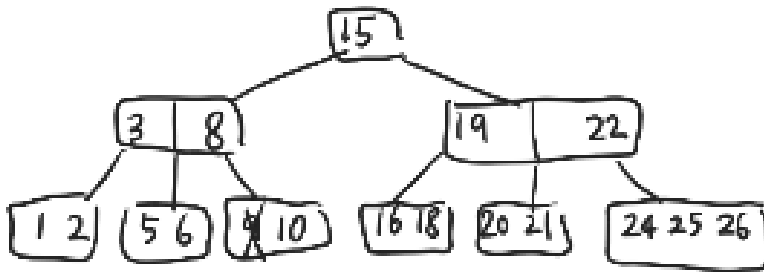
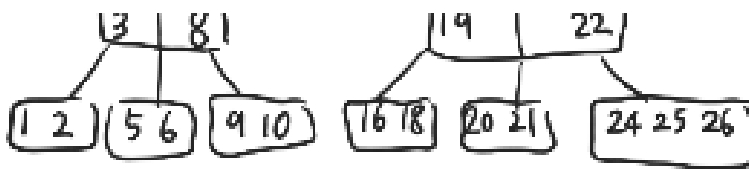


순서

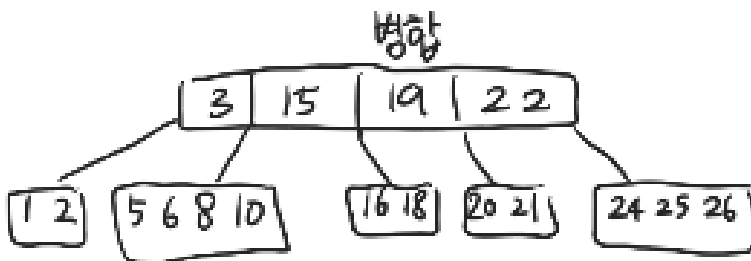
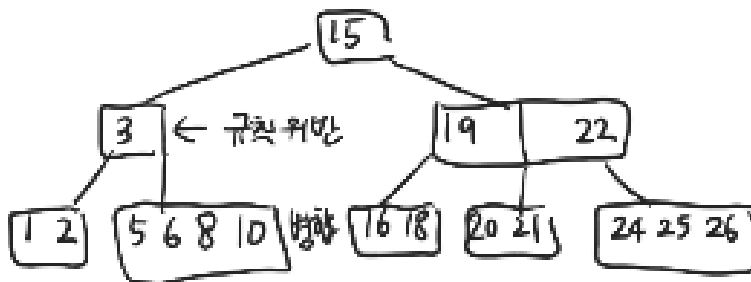
6 5 3 1 0 2 4 7 8 9

14.



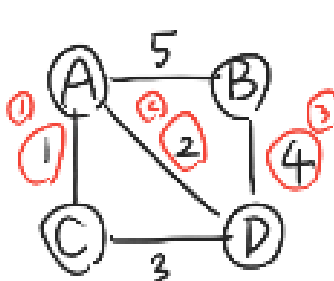


규칙 위반



2-노드 3-노드 4-노드 5-노드
0 3 1 2

15 A B C D
0 1 2 3

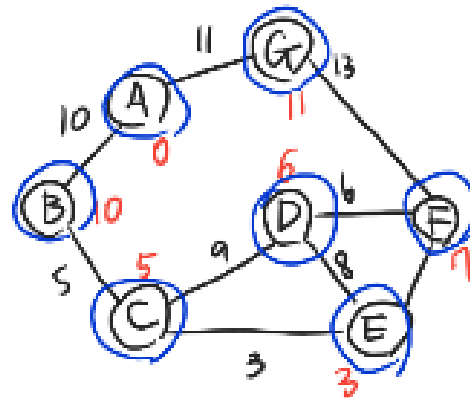
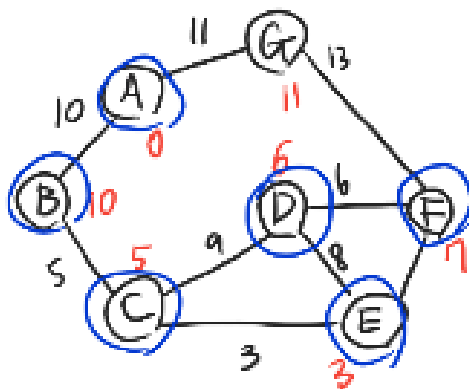
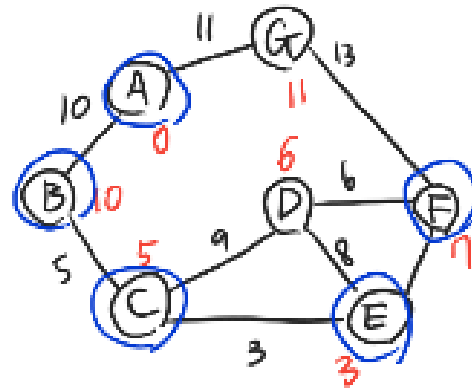
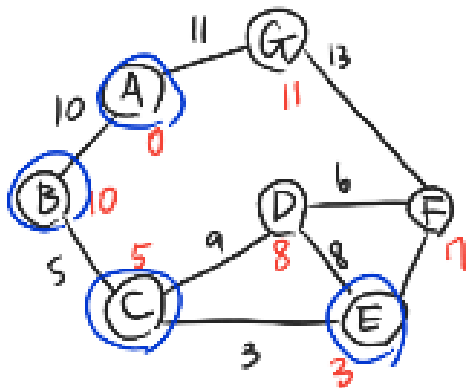
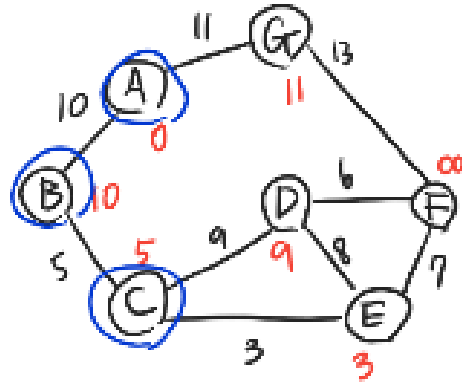
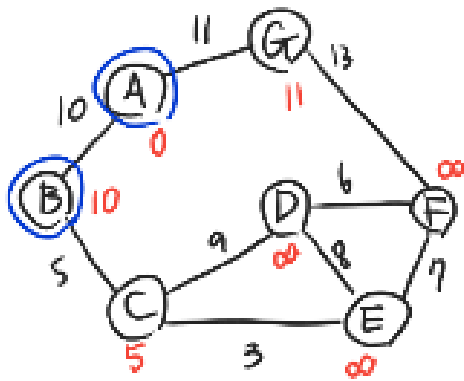
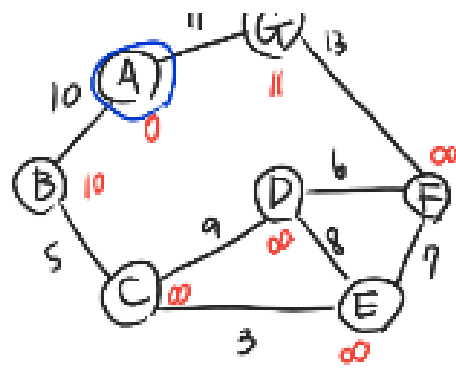
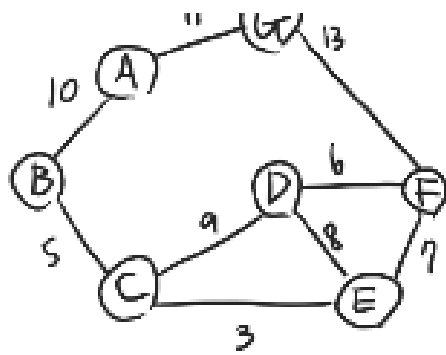


크루스칼 최소비용 신장트리
 $1 + 2 + 4 = 7$

16.

"

"



최소비용 : $11 + 10 + 5 + 6 + 7 + 3$
 $\quad \quad \quad 21 \quad 11 \quad 10 = 42$
 \overline{AG} 가 마지막에 추가

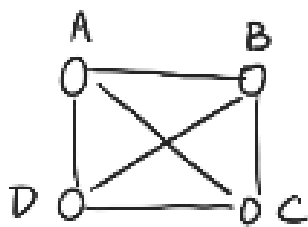
17. 7.0
 L.O

비밀가래프

A. $\vec{AB} \neq \vec{BA}$ 가 다르므로
 $n(n-1)$



18.



$$\frac{4 \times 3 \times 2 \times 1}{3 \times 2 \times 1} = 20 \text{ 개}$$

조건을 만족하지 않는

간선 수 $\frac{3 \times 2 \times 1}{2 \times 1} = 6 \text{ 개}$

삼각형 모양

신장트리 간선 수 3개 선택

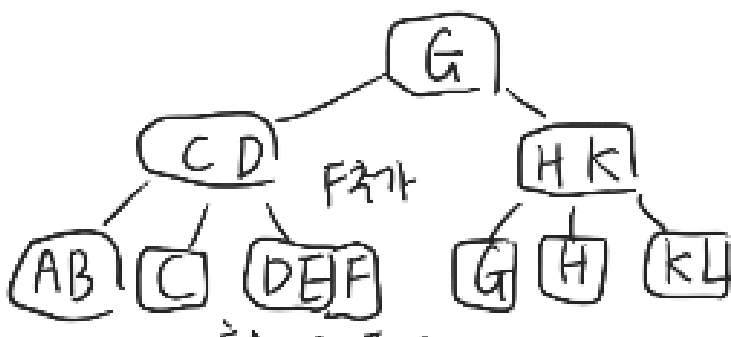
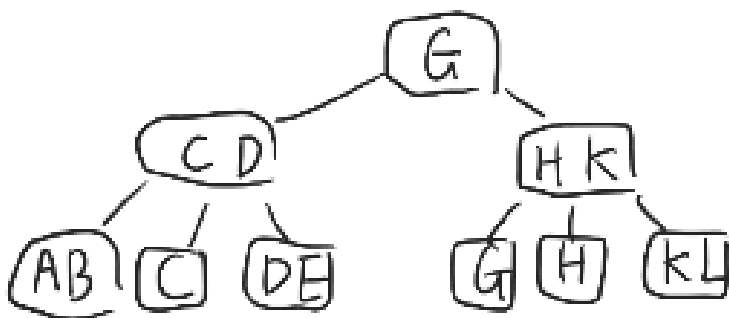
$$\frac{4 \times 3 \times 2}{3 \times 2 \times 1} = 4 \text{ 개}$$

$$20 - 4 = 16$$

19. $f(9) \rightarrow 9 \times f(6) \rightarrow 6 \times f(5) \rightarrow 5 \times f(2) \rightarrow 2 \times f(1) \rightarrow 1$

$$f(9) = 9 \times 6 \times 5 \times 2 \times 1 = 540$$

20. B+ 트리 삽입삭제가 leaf에서만 이루어집니다.



문서 오버플로우

